The Spotter's Page

Volume 7, Issue 1 Fall/Winter 2002

2002 Severe Weather...The Year in Review

Compared to the unusually inactive year of 2001, severe weather occurrences in 2002 returned to a more typical climatological normal in the Wakefield County Warning Area (CWA). There were several significant severe weather events during the past year that challenged Wakefield forecasters' ability to issue timely and accurate severe weather warnings. Severe weather warnings are issued for thunderstorms that produce tornadoes, hailstones of 3/4 inch or greater diameter, and/or damaging wind gusts exceeding 58 mph (50 knots).

The occurrence of severe weather in Wakefield's CWA started out very early in the 2002 calendar year, when a tornado hit the lower Maryland eastern shore. During the afternoon of January 6th, a small tornado developed as a squall line moved onshore from Tangier Sound into the western part of Somerset County near Deal Island. The tornado destroyed one mobile home and moved another mobile home off its foundation near the town of Chance. Also, several sailboats were knocked over and some pine trees were snapped in half. Based on the damage that occurred, the tornado was rated an F0 on the Fujita Scale. The Fujita Scale (Table 1 on Page 4) is used to rate the intensity of tornadoes based on the damage that occurs. Tornadoes rated as F0 produce winds 40-72 mph and cause minor damage. The same squall line that produced the tornado also produced significant wind damage farther south on the Virginia eastern shore in Accomack County. The storm damaged several trailer homes in Parksley, and a home and stable in the Melfa area. Severe storms are rare in January in the Wakefield CWA, especially those that include tornadoes. However, as this event shows, severe weather can and does occur at any time of year.

The remainder of January, February, and into most of March was devoid of severe weather in the Wakefield CWA. The first severe weather occurrence of spring 2002 occurred on the afternoon of March 26th, when a severe thunderstorm produced winds that caused sporadic tree damage in Brunswick, Chesterfield, and Henrico counties in east central Virginia.

Most of the month of April 2002 was inactive as far as severe weather was concerned. That changed notably on April 28th when a major outbreak of severe weather occurred in the mid-Atlantic region. Many of the storms that produced severe weather on this day were of classic supercell thunderstorm structure, which was unusual in the fact that "true" supercell thunderstorms are infrequent east of the Appalachian Mountains. One of the supercell thunderstorms produced the so-called "LaPlata Tornado". This tornado caused major destruction in LaPlata Maryland, where it was rated F-4 or

Off Long Beach, MD
April 28, 2002 Photo by
Ted L. Dutcher
Storm moving south-east
across the Chesapeake Bay

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ATTENTION

This is the last Spotter Newsletter to be mailed.
Please go to the Online **Color** Version available at:
http://weather.noaa.gov/akq/
or by sending your email address to
Bill Sammler – william.sammler@noaa.gov.

Fire Weather Program

Fire danger remained high across the region through the first half of the fall season, though certainly not as severe compared to the same time last year, due to soaking rains over the past couple of months. Beneficial rainfall from the remnants of tropical systems (Gustav, Isidore, and Kyle), along with 3-4 coastal systems since September 1st have abated the drought severity somewhat. Moisture levels within even the larger fuels (such as timber) have rebounded. During the latter half of autumn, typically there will be another peak in the fire danger, as breezy and drier conditions become more prominent. Therefore, keep in mind that despite the beneficial rainfall, the fire danger can worsen significantly in a matter of just a few days, considering the time of year and the long term drought. If you are planning to do any outdoor burning, stay abreast of the latest fire danger and any local burning restrictions or bans (if applicable). You can get the latest fire weather information from our website at: www.erh.noaa.gov/er/akq. You can also access the latest information regarding the fire danger from the state fire agencies: www.dof.state.va.us (in Virginia), www.dnr.state.md.us/forests/fireinfo.html (in Maryland), and www.dfr.state.nc.us (in North Carolina).

By Brian Hurley
Fire Weather Program Leader

Important Phone Numbers:

Severe weather reports ONLY line:
1-800-737-8624
Public phone line (forecast info):
(757) 899-4200
FAX : (757) 899-3605/5107

Aviation World's Fair Canceled

The 2003 Aviation Worlds Fair was scheduled from April 7th through 27th, 2003 at the Patrick Henry Airport in Newport News, Virginia. It would have commemorated the 100th anniversary of the Wright brothers December 17th, 1903 flight.

Until further notice, the 2003 Aviation Worlds Fair has been canceled due to lack of funding and state support.

By Michael Rusnak
Aviation Program Leader

2002 Summer Rip Current Data

The summary below are preliminary statistics for the summer beach season extending along the East Coast from Ocean City , Maryland, south to Currituck Beach Light, North Carolina.

Total Surf Rescues: Ocean City = 2,753
Virginia Beach = 582

	"LOW" Threat Forecasted		"Increased" Threat Forecasted		"High or Dangerous" Threat Forecasted	
	Ocean City	VA Beach	Ocean City	VA Beach	Ocean City	VA Beach
# of Days	**92**	93	45	39	2	7
# of Rescues	**2,030**	318	710	247	13	17
# of Rescues a Day	**22.1**	3.4	15.8	6.3	6.5	2.4

Winter 2002–2003

The NOAA's Climate Predication Center is predicting a normal outlook for the upcoming winter across the mid-Atlantic region (*see Figure 1*). El Nino, the phenomena whereby warmer-than-normal ocean temperatures over the equatorial Pacific Ocean occur *(see Figure 2)*, has returned, however, it is predicted to be weaker than in 1997-1998. The 1997-1998 El Nino resulted in destructive coastal storms along the mid-Atlantic coast, devastating wind and rain storms in the western U.S., blizzards for the Rocky Mountains and northern U.S., and tornadoes in Florida. There was very little snow or cold weather that occurred in this area. To follow El Nino, go to website http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/index.html.

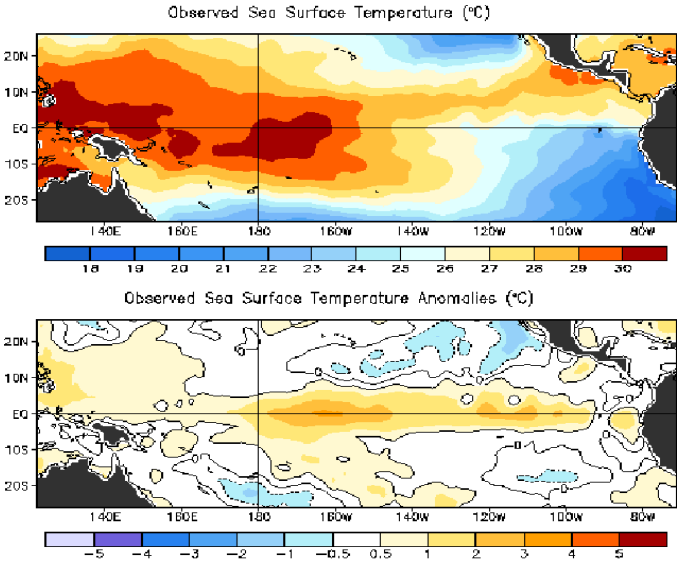

Figure 2, Observed Sea Surface Temperature and Anomaly (Climate Prediction Center).

El Nino conditions do favor a storm track across the southern U.S., with increased storminess along the East Coast of the U.S.. Otherwise, there are no strong signals (rain vs snow, cold vs warm) as to how the El Nino may affect the mid-Atlantic region. Climatologically, most winter seasons in this area have variable weather (regardless of whether there has been an El Nino or not), ranging from tranquil and seasonable, to wide fluctuations between cold and warm temperatures, to strong noreasters.

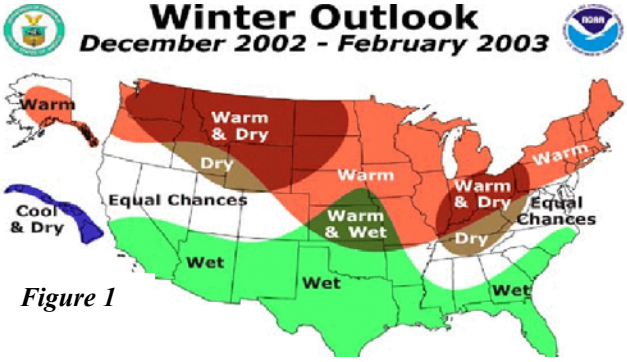

Figure 1

As we all know, there only needs to be one major winter storm to cause tremendous inconveniences. Several recent examples include the heavy snow events of January 2002 and January 2000, and ice storms in December 1999 and January-February 1994.

Forecasting whether a particular winter storm will produce snow, ice or rain, or a mixture of precipitation is one of the most difficult forecast problems meteorologists face. The mid-Atlantic region's close proximity to both the Atlantic Ocean and a cold air source over Eastern Canada make forecasting the exact position of the rain/snow line a major challenge. In fact, a deviation in a storm's track of only 50 miles would potentially mean the difference between receiving a foot of snow, an inch of ice, or a couple of inches of rain.

The key factor in determining winter precipitation type is the depth of cold air above the ground *(see Figure 3)*.

By Wayne Albright
Senior Forecaster

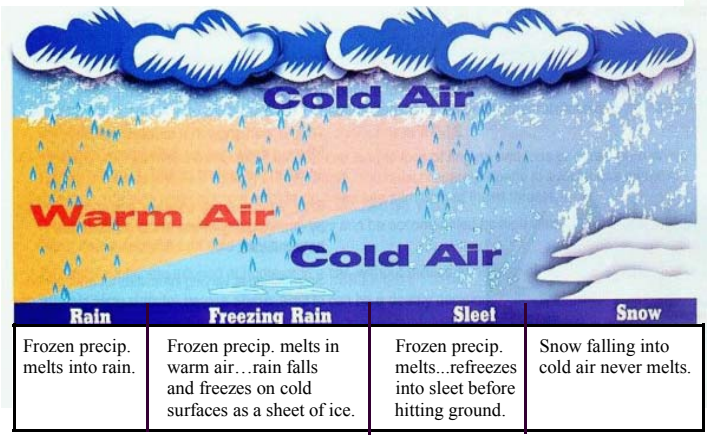

Figure 3, Winter Precipitation Type

Severe Weather, cont'd

(Continued from page 1)

"devastating" on the Fujita Scale. This unusually long-lived tornado initially formed over the mountains of northwestern Virginia, then moved on a near-continuous path across much of southern Maryland. (Read more about the LaPlata Tornado at http://www.erh.noaa.gov/er/lwx/). The tornado moved into the Wakefield CWA as it crossed the central Chesapeake Bay, and came ashore at Taylor's Island in western Dorchester County. The tornado was rated F-3, as it destroyed a house south of Church Creek in Dorchester County, then tracked all the way to the Salisbury area before finally dissipating. In all, the tornado produced 3 deaths, 122 injuries, and over $100 million in property damage. During the same severe weather outbreak, another supercell thunderstorm produced an F1 tornado (73-112 mph or moderate" on the Fujita Scale) in the Emporia area of south central Virginia. This tornado destroyed 3 mobile homes, caused structural damage to 50 other homes, and an apartment complex. In addition to these 2 tornadoes, numerous occurrences of large hail and thunderstorm wind damage were reported across the lower Maryland eastern shore, central and eastern Virginia, and northeast North Carolina.

The month of May is normally the peak of the severe weather season for the Wakefield CWA, and May 2002 followed the climatological trend. Major outbreaks of multiple severe weather events occurred on the 2nd, 13th, and 18th of the month, with minor outbreaks on the 7th and 9th. Several "weak" (rated F0 to F1 on the Fujita Scale) tornadoes occurred during the May 2nd event. One tornado damaged a mobile home and outbuildings on the lower Maryland eastern shore, in Somerset and Worcester counties. Two other weak tornadoes produced minor structural and tree damage in Nottoway and Prince George counties that same afternoon. All other severe weather that occurred during the month of May resulted from thunderstorms that produced strong winds or large hail.

The first half of the month of June remained fairly active for severe weather in the Wakefield CWA. There was a major severe weather outbreak on June 6th, which including numerous occurrences of high winds and large hail. Minor outbreaks of singular or several severe weather events were recorded on the 1st, 4th, 13th and 14th of the month. During the major outbreak of severe weather on June 6th, widespread damage from winds produced by thunderstorms was reported across sections of central and eastern Virginia, and northeast North Carolina. Severe thunderstorms also produced several occurrences of golfball-sized hail on this date. Sporadic thunderstorm wind damage and large hail occurrences accompanied the other minor severe weather outbreaks in June.

Historically, the number of severe weather events peak in May with a steady decrease in occurrences through the summer months. The severe weather season 2002 followed this climatological trend with fewer events reported in July, August and, especially September. One storm of particular interest dur-

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SCALE	WIND ESTIMATE (MPH)	TYPICAL DAMAGE
F0	< 73	**Light damage**. Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.
F1	73-112	**Moderate damage**. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.
F2	113-157	**Considerable damage**. Roofs torn off frame houses; mobile homes demolished; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
F3	158-206	**Severe damage**. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy
F4	207-260	**Devastating damage**. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars
F5	261-318	**Incredible damage**. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air; trees debarked.

Table 1: Fujita Tornado Scale Developed by Dr. T. Theodore Fujita in 1971.

Cooperative Corner

Hopefully you all have experienced some of the recent rains. These rains have given us some relief but we still remain in a drought. Many areas remain 10 inches or more behind, over the last 365 days. We need to have several more periods of steady rain and a good winter snowfall to eat into the deficit. Talking with many of you over the summer months I know that you were often asked about rainfall and the status of the drought. Throughout the summer your reports were in constant use by both government and the private sector, and were invaluable in both evaluating the extent of the drought and in making comparisons with past events. This winter your snow reports will receive similar attention.

With winter weather approaching, I ask that you all take a few moments and review your procedures for measuring and reporting snowfall. It is not something we have to do too often and waiting until the snow is falling will result in confusion and errors. Last year we sent everyone a videotape on the subject and it is only a few minutes long. As always, if you have a question please call me. I have also ordered some snow boards for distribution and will mail them out as they become available.

Observers who call their daily observations into the ROSA computer recently experienced problems reaching the ROSA computer. The computer went down in a storm and after being repaired, failed a second time. Most remembered the backup numbers and dialed into another site, I recommend programming one of these alternate numbers into your phone to minimize the problem.

Forms: When sending in your B-91's, please ensure you send in the original and that you review it to make sure the entries are legible, many times you can spot and correct an entry that we would not be able to decipher. Also, please review the header to ensure the station name is included.

If you need to contact me, please e-mail at Richard.Curry@noaa.gov, if you have an e-mail address, please send it to me.

Coop Program Modernization

The Coop program is getting increased recognition by both private and governmental agencies. They have recognized that COOP data have a significant economic value to the public and private sector of our society. A COOP Modernization Partners Forum was held on September 18, 2002, and outlined the need for the COOP program, it's value, and the need to increase it's value by updating equipment. Specific equipment was not identified, but the need to add automated data communication, dissemination, and archiving was identified, with a goal of obtaining near real time temperature and precipitation. The goal is to complete equipment upgrades by 2011. Observers with Fisher Porter recording rain gages (7 in our area) may see changes in the near future. I am currently involved in a readiness evaluation of a modification that could be fielded in 2003. It replaces the punch tape mechanism with a data logger. Rather than removing a paper tape and mailing it in, a plastic key would be used to download and transfer data. Another feature that is being evaluated is the ability to call into the sensor to obtain real time data rather than waiting until the end of the month. The data logger itself would store a years worth of data while the key could hold 88 days. For additional information go to http://www.nws.noaa.gov/om/coop/coopmod.htm.

By Rick Curry
COOP Program Manager

Severe Weather cont'd

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ing this period caused major damage in Northumberland County on the Northern Neck of Virginia. Wind gusts estimated to be 70 mph accompanied a thunderstorm that moved through a marina located on Ingram Bay. The marina suffered significant damage to several boathouses.

A recap of the severe weather season shows that 248 severe weather warnings have been issued thus far by the Wakefield office during 2002. This compares with only 87 severe weather warnings issued for all of 2001!

By Brian Cullen
Senior Forecaster

Outreach Opportunities

The National Weather Service actively reaches out to the community. We visit schools, community groups, and adult organizations, discussing weather, marine and aviation type topics. We also take part in many other events, such as Boat Shows, VA State Fair, and Emergency Management meetings. You may schedule for one of our staff to come out and give a presentation by calling (757) 899-4200. Please provide sufficient advance notice (1-3 months) because our staff members work a rotating shift schedule.

Office tours may be scheduled by appointment only, due to new security measures that have been implemented, per order of Department of Commerce and the National Weather Service Security offices.

Student Programs

There are several programs available which assist pre-college and college students in learning more about careers in meteorology.

1. **Student Temporary Employment Program (STEP)** - job opportunities under this program offer you temporary employment. Employment can range from summer jobs to positions that last as long as you are a student. These employment opportunities need not be related to your academic field of study.
2. **Student Career Experience Program (SCEP)** - This program offers you valuable work experience directly related to your academic field of study. It provides formal periods of work and study while you are attending school.
3. **Internship** - In 1994, the Postsecondary Summer Internship Program was established enabling the DOC to benefit from highly skilled students for a ten-week session. In 1998, the program was expanded to include both semesters of the school year in addition to the summer session. For additional information, view www.doc.gov/oebam/internwebsite.htm.
4. **Student Volunteer** - The program offers unpaid training opportunities to students in high school and college. These opportunities provide work experience related to your academic program.
5. **Job Shadow** - This program is intended for pre-college/college students interested in meteorology, atmospheric sciences, or hydrology as a possible career. The student spends up to one day with a meteorologist observing the forecast process, and discussing National Weather Service career opportunities.

For further information about these programs, please visit ohrm.doc.gov/jobs/student or call (757) 899-4200.

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